

IN THE CLAIMS:

This listing of claims will replace all prior versions of the claims.

Claim 1 (Canceled)

2. (Currently amended) An isolated nucleic acid molecule ~~which functions as a probe or primer for the selective detection of prostate cancer tissue~~ comprising a polynucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence comprising the polynucleotide clone contained in the deposit at the Centraal voor Schimmelcultures as accession number CBS 682.97;

(b) a nucleotide sequence comprising the polynucleotide clone contained in the deposit at the Centraal voor Schimmelcultures as accession number CBS 100521;

(c) a nucleotide sequence comprising the nucleotide sequence set forth in SEQ ID NO:1, 3, 4[[,]] or 6, wherein said nucleotide sequence is over-expressed in prostate cancer tissue as compared to normal human tissues;

(d) a nucleotide sequence fully complementary to any of the nucleotide sequences in (a), (b)[[,]] or (c), wherein said nucleotide sequence is over-expressed in prostate cancer tissue as compared to normal human tissues; and

(e) a ~~nucleotide sequence which probe or primer that~~ hybridizes under high stringency conditions to any of the nucleotide sequences in (a), (b), (c) or (d), said high stringency conditions comprising a hybridization at 68°C[[,]] in ~~5x5X~~ SSC, ~~5x5X~~ Denhardt's solution, 1% SDS, and 100 µg/ml denatured salmon sperm DNA, ~~to any of the nucleotide sequences in (a), (b), (c), or (d),~~ wherein said nucleotide sequence does not hybridize to nucleotides 511-985 of SEQ ID NO:1 ~~or to~~, nucleotides 346-815 of SEQ ID NO:3, nucleotides 346-815 of SEQ ID NO:4, nucleotides 533-1007 of SEQ ID NO:6,[[;]] and

wherein said nucleotide sequence in ~~(a) (c)~~ is ~~capable of functioning as a probe or primer for the detection of any one of the nucleotide sequences in (a), (b), (c) or (d)~~ and selectively hybridizes to ~~one or more~~ polynucleotides over-expressed in prostate cancer tissue as compared to ~~one or more~~ normal human tissues selected from the group consisting of: artery, brain, breast, duodenum, heart, liver, ovary, placenta, seminal vesicles, skeletal muscle, skin, spinal cord, spleen and testis, ~~as measured by RT-PCR; and~~
~~further, wherein said nucleotide sequence in (a) (c) functions as a probe, or primer for the selective detection of prostate cancer tissue.~~

Claim 3 (Canceled)

4. (Currently amended) An isolated nucleic acid molecule comprising the nucleotide sequence set forth in SEQ ID NO:1, 3, 4[,] or 6.

5. (Previously presented) The isolated nucleic acid molecule according to claim 4, wherein the molecule encodes the polypeptide comprising the complete amino acid sequence set forth in SEQ ID NO:2 or 7.

6. (Previously presented) The isolated nucleic acid molecule according to claim 2, wherein the nucleotide sequence encodes a PCA3 polypeptide comprising the complete amino acid sequence encoded by the polynucleotide clone contained in the deposit at the Centraal voor Schimmelcultures as accession number CBS 682.97.

7. (Previously presented) The isolated nucleic acid molecule according to claim 2, wherein the nucleotide sequence encodes a PCA3 polypeptide comprising the complete amino acid sequence encoded by the polynucleotide clone contained in the deposit at the Centraal voor Schimmelcultures as accession number CBS 100521.

8. (Currently amended) An isolated nucleic acid molecule consisting of 10 to 50 nucleotides which specifically hybridizes to PCA3 RNA or DNA, wherein said nucleic acid molecule is, or is complementary to, a nucleotide sequence consisting of at least 10 consecutive nucleotides from PCA3 exon 1 (1-98 of SEQ ID NO:1 or 1-120 of SEQ ID NO:6), 2 (99-263 of SEQ ID NO:1 or 121-285 of SEQ ID NO:6), 3 (264-446 of SEQ ID NO:1 or 286-468 of SEQ ID NO:6), 4a (447-985 of SEQ ID NO:1 or 469-1007 of SEQ ID NO:6), 4b (986-2037 of SEQ ID NO:1 or 1008-2066 of SEQ ID NO:6), 4c (2067-2622 of SEQ ID NO:6), or 4d (2623-3582 of SEQ ID NO:6), and wherein said nucleic acid molecule does not specifically hybridize to nucleotides 511-985 of SEQ ID NO:1 or, to nucleotides 533-1007 of SEQ ID NO:6.

9. (Currently amended) A method of detecting PCA3 nucleic acid in a sample comprising:

- a) contacting said sample with the nucleic acid molecule according to claim 8[[,]] under conditions such that hybridization occurs;[[,]] and
- b) detecting the presence of said molecule bound to PCA3 nucleic acid.

10. (Original) A kit for detecting the presence of PCA3 nucleic acid in a sample comprising at least one container means having disposed therein the nucleic acid molecule according to claim 8.

11. (Canceled)

12. (Previously presented) A recombinant nucleic acid molecule comprising a vector and the nucleic acid molecule according to claim 2.

13. (Currently amended) An isolated cell that contains the recombinant nucleic acid molecule according to claim ~~1~~12.

14. (Currently amended) A non-human organism that contains the recombinant nucleic acid molecule according to claim ~~1~~12.

Claims 15-24 (Canceled)

25. (Previously presented) A recombinant nucleic acid molecule comprising a vector and the nucleic acid molecule according to claim 4.

26. (Currently Amended) An isolated cell that contains the recombinant nucleic acid molecule according to claim 25.

27. (Previously presented) An isolated nucleic acid molecule comprising the polynucleotide sequence set forth from nucleotides 401 to 553 of SEQ ID NO:6.

28. (Previously presented) The isolated nucleic acid molecule of claim 27, wherein said polynucleotide sequence encodes the complete amino acid sequence as set forth in SEQ ID NO:7.

29. (Currently amended) The isolated nucleic acid molecule according to claim 4, wherein the molecule comprises the nucleotide sequence as set forth in SEQ ID NO:1-~~6~~6.

30. (Canceled)

31. (Previously presented) The isolated nucleic acid molecule according to claim 4, wherein the molecule comprises the nucleotide sequence as set forth in SEQ ID NO:1.

32. (Previously presented) The isolated nucleic acid molecule according to claim 4, wherein the molecule comprises the nucleotide sequence as set forth in SEQ ID NO:3.

33. (Previously presented) The isolated nucleic acid molecule according to claim 4, wherein the molecule comprises the nucleotide sequence as set forth in SEQ ID NO:4.

34. (Canceled)

35. (Previously presented) The recombinant nucleic acid molecule according to claim 25, wherein the molecule comprises the nucleotide sequence as set forth in SEQ ID NO:6.

36. (Canceled)

37. (Previously presented) A recombinant nucleic acid molecule comprising a vector and the nucleic acid molecule according to claim 27.

38. (Currently Amended) An isolated cell that contains the recombinant nucleic acid molecule according to claim 37.

39. (Currently amended) An isolated nucleic acid molecule ~~which functions as a probe or primer for the selective detection of prostate cancer tissue~~ comprising a polynucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence comprising the polynucleotide clone contained in the deposit at the Centraal voor Schimmelcultures as accession number CBS 682.97;

(b) a nucleotide sequence comprising the polynucleotide clone contained in the deposit at the Centraal voor Schimmelcultures as accession number CBS 100521;

(c) a nucleotide sequence comprising the nucleotide sequence set forth in SEQ ID NO:1, 3, 4[[,]] or 6, wherein said nucleotide sequence is over-expressed in prostate cancer tissue as compared to normal human tissues;

(d) a nucleotide sequence fully complementary to any of the nucleotide sequences in (a), (b)[[,]] or (c), wherein said nucleotide sequence is over-expressed in prostate cancer tissue as compared to normal human tissues; and

(e) a ~~nucleotide sequence which probe or primer that~~ hybridizes under high stringency conditions to any of the nucleotide sequences in (a), (b), (c) or (d), said high stringency conditions comprising a hybridization at 68°C[[,]] in ~~5x5X~~ SSC, ~~5x5X~~ Denhardt's solution, 1% SDS, and 100 µg/ml denatured salmon sperm DNA, ~~to any of the nucleotide sequences in (a), (b), (c), or (d)~~, wherein said nucleotide sequence does not hybridize to nucleotides 511-985 of SEQ ID NO:1 ~~or to~~ nucleotides 346-815 of SEQ ID NO:3, nucleotides 346-815 of SEQ ID NO:4, or nucleotides 533-1007 of SEQ ID NO:6₁[[;]]and wherein said nucleotide sequence ~~in (a) (e) is capable of functioning as a probe or primer for the detection of any one of the nucleotide sequences in (a), (b), (c) or (d) and selectively hybridizes to one or one or more polynucleotides over-expressed in prostate cancer tissue as compared to human prostate cancer cell lines selected from the group consisting of: ALVA-31, JCA-1 and PPC-1; and~~
~~further wherein said nucleotide sequence in (a) (e) functions as a probe, or primer for the selective detection of prostate cancer tissue.~~

40. (Canceled)

41. (Previously presented) A recombinant nucleic acid molecule comprising a vector and the nucleic acid molecule according to claim 39.

42. (Currently Amended) An isolated cell that contains the recombinant nucleic acid molecule according to claim 41.

43. (Previously presented) A non-human organism that contains the recombinant nucleic acid molecule according to claim 41.

44. (Currently amended) The isolated nucleic acid molecule of claim 2, wherein the nucleotide sequence in (e) is a nucleic acid sequence molecule consisting of 10 to 50 nucleotides.

45. (Currently amended) The isolated nucleic acid molecule of claim 39, wherein the nucleotide sequence in (e) is a nucleic acid sequence molecule consisting of 10 to 50 nucleotides.

46. (New) An isolated nucleic acid molecule comprising a polynucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence comprising the polynucleotide clone contained in the deposit at the Centraal voor Schimmelcultures as accession number CBS 682.97;

(b) a nucleotide sequence comprising the polynucleotide clone contained in the deposit at the Centraal voor Schimmelcultures as accession number CBS 100521;

(c) a nucleotide sequence comprising the nucleotide sequence set forth in SEQ ID NO:1, 3, 4 or 6, wherein said nucleotide sequence is over-expressed in prostate cancer tissue as compared to normal human tissues;

(d) a nucleotide sequence fully complementary to any of the nucleotide sequences in (a), (b) or (c), wherein said nucleotide sequence is over-expressed in prostate cancer tissue as compared to normal human tissues; and

(e) a probe or primer that hybridizes under high stringency conditions to any of the nucleotide sequences in (a), (b), (c) or (d), said high stringency conditions comprising a hybridization at 68°C in 5X SSC, 5X Denhardt's solution, 1% SDS, and 100 µg/ml denatured salmon sperm DNA, wherein said nucleotide sequence selectively hybridizes to polynucleotides over-expressed in prostate cancer tissue as compared to normal human tissue.

47. (New) The isolated nucleic acid molecule according to claim 46, wherein the nucleotide sequence encodes a PCA3 polypeptide comprising the complete amino acid sequence encoded by the polynucleotide clone contained in the deposit at the Centraal voor Schimmelcultures as accession number CBS 682.97 or as accession number CBS 100521.

48. (New) An isolated nucleic acid molecule consisting of 10 to 50 nucleotides which specifically hybridizes to PCA3 RNA or DNA, wherein said nucleic acid molecule is, or is complementary to, a nucleotide sequence consisting of at least 10 consecutive nucleotides from PCA3 exon 1 (1-98 of SEQ ID NO:1 or 1-120 of SEQ ID NO:6), 2 (99-263 of SEQ ID NO:1 or 121-285 of SEQ ID NO:6), 3 (264-446 of SEQ ID NO:1 or 286-468 of SEQ ID NO:6), 4a (447-985 of SEQ ID NO:1 or 469-1007 of SEQ ID NO:6), 4b (986-2037 of SEQ ID NO:1 or 1008-2066 of SEQ ID NO:6), 4c (2067-2622 of SEQ ID NO:6), or 4d (2623-3582 of SEQ ID NO:6).

49. (New) A method of detecting PCA3 nucleic acid in a sample comprising:

- a) contacting said sample with the nucleic acid molecule according to claim 48 under conditions such that hybridization occurs; and
- b) detecting the presence of said molecule bound to PCA3 nucleic acid.

50. (New) A kit for detecting the presence of PCA3 nucleic acid in a sample comprising at least one container means having disposed therein the nucleic acid molecule according to claim 48.

51. (New) A recombinant nucleic acid molecule comprising a vector and the nucleic acid molecule according to claim 46.

52. (New) An isolated cell that contains the recombinant nucleic acid molecule according to claim 51.

53. (New) A non-human organism that contains the recombinant nucleic acid molecule according to claim 52.

54. (New) An isolated nucleic acid molecule comprising a polynucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence comprising the polynucleotide clone contained in the deposit at the Centraal voor Schimmelcultures as accession number CBS 682.97;

(b) a nucleotide sequence comprising the polynucleotide clone contained in the deposit at the Centraal voor Schimmelcultures as accession number CBS 100521;

(c) a nucleotide sequence comprising the nucleotide sequence set forth in SEQ ID NO:1, 3, 4 or 6, wherein said nucleotide sequence is over-expressed in prostate cancer tissue as compared to normal human tissues;

(d) a nucleotide sequence fully complementary to any of the nucleotide sequences in (a), (b) or (c), wherein said nucleotide sequence is over-expressed in prostate cancer tissue as compared to normal human tissues; and

(e) a probe or primer that hybridizes under high stringency conditions to any of the nucleotide sequences in (a), (b), (c) or (d), said high stringency conditions comprising a hybridization at 68°C in 5X SSC, 5X Denhardt's solution, 1% SDS, and 100 µg/ml denatured salmon sperm DNA, wherein said nucleotide sequence selectively hybridizes to polynucleotides over-expressed in prostate cancer tissue as compared to human prostate cancer cell lines selected from the group consisting of: ALVA-31, DU145, JCA-1, PPC-1, PC3, and TSU-Pr1.

55. (New) A recombinant nucleic acid molecule comprising a vector and the nucleic acid molecule according to claim 54.

56. (New) An isolated cell that contains the recombinant nucleic acid molecule according to claim 55.

57. (New) A non-human organism that contains the recombinant nucleic acid molecule according to claim 55.

58. (New) The isolated nucleic acid molecule of claim 46, wherein the nucleotide sequence in (e) is a nucleic acid sequence molecule consisting of 10 to 50 nucleotides.

59. (New) The isolated nucleic acid molecule of claim 54, wherein the nucleotide sequence in (e) is a nucleic acid sequence molecule consisting of 10 to 50 nucleotides.

60. (New) The isolated nucleic acid molecule of claim 46, wherein the normal tissue in (e) is selected from the group consisting of: artery, brain, breast, bladder, colon, duodenum, heart, liver, lung, ovary, pancreas, placenta, seminal vesicles, skeletal muscle, skin, spinal cord, spleen and testis.